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# Seasonal variation in semen quality of Alpine bucks throughout the year [1]

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## Abstract

The primary objective of this study was to examine the seasonal changes in semen volume, sperm motility, viability, and concentration of Alpine bucks throughout the year in the annual semen collection process. Twelve 3-4-year-old Alpine bucks were used in the experiment, with semen collected twice a week and with at least two days of interval in between the collections throughout the year. The results show that semen volume was the highest in December (0.96 ± 0.22 mL) and the lowest in April (0.43 ± 0.06 mL). Sperm motility remained high from August to January and remained low from February to June, reaching its lowest point in June (50.71 ± 2.66%).Viability started increasing in August (72.17 ± 1.96%), and peaked in November (90.20 ± 0.86%) before gradually declining, which reached its lowest point in May (58.57 ± 1.07%). Sperm concentration was higher in March ($91.63 \times 10^6$ spermatozoa/mL) and May ($89.20 \times 10^6$ spermatozoa/mL), with relatively lower sperm concentrations in other months. Further analysis of the correlation between the temperature-humidity index (THI) and various semen characteristics revealed a negative correlation between THI and sperm viability, motility rate, sperm activity, and semen volume. THI was positively correlated only with sperm concentration (0.140). The semen characteristics observed in this annual collection suggested that high THI values had significantly negative impact on sperm motility. These results can provide a reference for other related studies and breeders in adopting appropriate measures during the hot and humid seasons.

Key words: Alpine bucks, Semen quality, Temperature-humidity index.

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